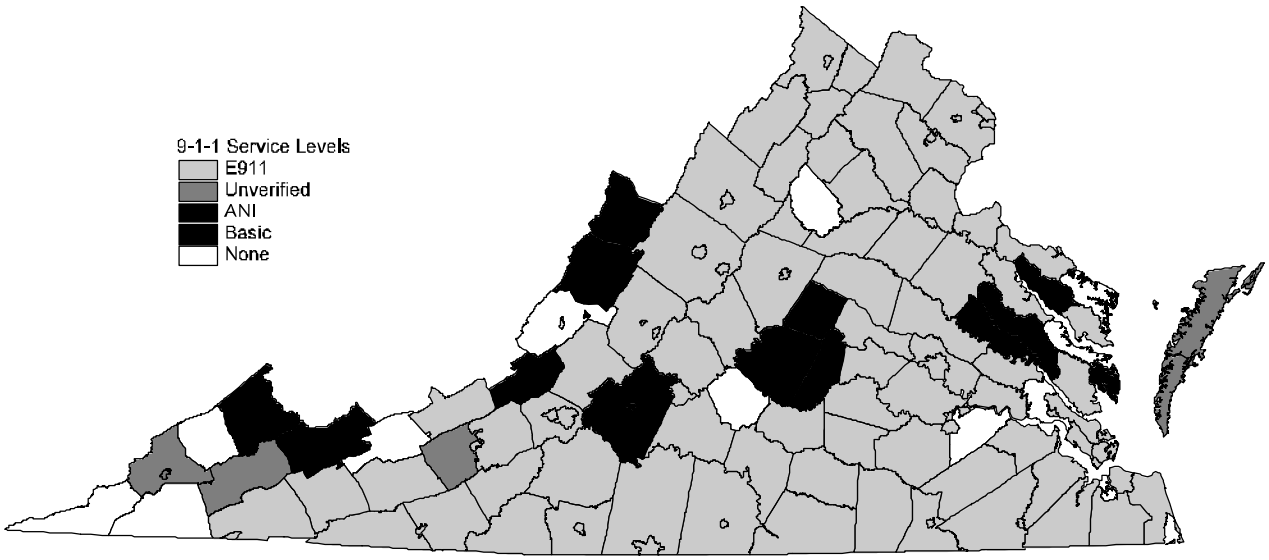
Wireless E-911 Services Board

FY2001

Annual Report



Prepared by the
Department of Technology Planning
Division of Public Safety Communications

October 2001

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Executive Summary

Since being constituted in October 2000, the Wireless E-911 Services Board (the Board) has met monthly as required by the *Code of Virginia.* During that time, the Board has:

- conducted the audit of FY2000 funding provided by the previous Board (22 localities, 7 wireless service providers);
- approved eight adjustments to FY2001 funding requests;
- approved 57 PSAPs for FY2002 funding (approximately $7.6 million);
- approved nine wireless service providers for FY2002 funding;
- is currently processing the audit of FY2001 funding received by the localities and wireless service providers;
- drafted guidelines for both the Wireline and the Wireless E-911 grant process;
- conducted Phase I status reviews with each major wireless service provider in the Commonwealth; and
- approved guidelines for Phase II funding for PSAPs and wireless service providers.

Section 56-484.14 of the *Code of Virginia* requires the Board to:

> 7. Report annually to the Governor, the Senate Committee on Finance and the House Committee on Appropriations, and the Virginia State Crime Commission on (i) the state of enhanced wireless emergency telecommunications services in the Commonwealth, (ii) the impact of, or need for, legislation affecting enhanced wireless emergency telecommunications services in the Commonwealth, (iii) the need for changes in the Wireless E-911 funding mechanism as appropriate, and (iv) the sufficiency of other moneys appropriated for the provision of enhanced wireline emergency telecommunications services only in those local jurisdictions not wireline capable as of July 1, 2000.

This report is to satisfy this requirement. Though the first report from the Board was provided in February 2001, this and future reports will be provided in October and will be based on the accomplishments of the previous fiscal year.

The state of enhanced wireless emergency telecommunications services in the Commonwealth

The implementation of wireless enhanced 9-1-1 (E-911) Phase I, the caller telephone number and the address of the cell site has progressed, though not quickly. While some wireless service providers have been aggressive with implementing service, technical problems as well as corporate issues have slowed implementations by other providers. All providers are now required to provide the Board with a monthly report indicating progress and any issues delaying implementation. These reports are public and are posted on the Board's website (www.va911.org) to allow public review.

Though October 1, 2001 is a milestone for the implementation of Phase II, the caller's actual location by longitude and latitude, every major wireless service provider has requested a waiver from the Federal Communications Commission (FCC) to delay the implementation of the service. Some of the waivers seek only a short delay before implementing a service that meets the FCC mandated accuracy for locating the caller. Other providers are seeking a waiver that commits to

implementing an interim solution that does not meet the accuracy requirement with the final solution being implemented for as long as several years in the future. Even though Phase II may be delayed, it is expected that at least a few installations will occur before the end of FY2002 so the Board is providing funding accordingly.

The impact of, or need for, legislation affecting enhanced wireless emergency telecommunications services in the Commonwealth

While the current sections of the *Code of Virginia* that address wireless E-911 are generally sound, the Board is proposing two changes for the 2002 General Assembly Session. The first would explicitly include prepaid wireless service in the collection of the wireless surcharge and provide wireless service providers two methods to collect it. Currently, an inequity exists in that some providers collect the surcharge from prepaid subscribers and others do not collect it. The second recommended change would allow Board members to send an alternate to act in their place if they are unable to attend a Board meeting. The Board has had several meetings during the past year when a quorum was not met or was in jeopardy.

The need for changes in the Wireless E-911 funding mechanism as appropriate

The Wireless E-911 Fund is fiscally sound. It had a fund balance of just over $38 million at the end of FY2001. Projections indicate that the $0.75 surcharge is appropriate to fund statewide deployment of wireless E-911. It is actually fortunate that the fund has had an opportunity to grow as deployment spread since the cost to implement Phase II is primarily a non-recurring cost and may be extremely high. Initial projections indicated that implementation of Phase II over the next three years will deplete the remaining fund balance.

The sufficiency of other moneys appropriated for the provision of enhanced wireline emergency telecommunications services

Progress with the implementation of wireline E-911 has been limited due to the lack of state funding assistance. A few localities have been able to begin the process, but few will be able to implement service without assistance. The Board renews its request for authorization to expend up to $9.8 million from the Wireless E-911 Fund for wireline E-911 grants to localities.

The following sections of the report provide a more detailed analysis of the current state of E-911 in the Commonwealth exploring both wireless and wireline implementations.

Legislative History

In 1998, the General Assembly passed legislation that established a $0.75 surcharge on wireless telephone service and created the Board to administer the funds. The original Board consisted of seven members, three from local government, three from the telecommunications industry and the Comptroller of Virginia, who chaired the Board. The Board was a separate political subdivision and did not have any staff support within the state government. In spite of this, the Board began distributing funding to localities and wireless service providers in FY2000, providing over $4 million for the provision of wireless E-911.

During the 2000 Session, the General Assembly enacted omnibus legislation (Senate Bill 148) to enhance the delivery of public safety services to citizens of the Commonwealth through improvements to emergency telecommunications systems. First, the legislation established 9-1-1 as the only emergency number for use in the Commonwealth and dates by which localities must implement wireline E-911 and wireless 9-1-1. It also expanded the Wireless E-911 Services Board both in size and in scope. The Board increased to fourteen members adding representatives for the police chiefs, fire chiefs, EMS chiefs, sheriffs, State Police, and emergency management. The scope of the Board was expanded to include the disbursement of funding for the implementation of wireline enhanced 9-1-1 and policy-making authority for issues relating to wireless 9-1-1. To provide staff support the Division of Public Safety Communications (DPSC) was created within the Department of Technology Planning.

In 2001, two pieces of legislation passed impacting 9-1-1. The first revised several definitions in the legislation including one change to specifically include resellers of wireless service in the requirement for surcharge collection. The other bill (HB1611) excluded localities with no local wireline E-911 surcharge and less than 50% wireless telephone service coverage from having to implement wireline and wireless E-911.

Need for Legislative Change

One issue that the Board is directed to address in this report is the need for legislative changes. To develop a list of potential issues for the 2002 General Assembly Session, suggestions were solicited from the Board members and any other interested party. Two issues were raised that warranted consideration by the Board, the application of the surcharge to prepaid wireless telephone service and alternative representation if a Board member is absent from a meeting.

Currently, approximately 10 wireless service providers in Virginia offer prepaid wireless service. Of these, seven collect the wireless surcharge and three do not. To create equity among the providers, the *Code* must be modified to either explicitly include or exclude prepaid wireless service from the surcharge. The impact of excluding prepaid from the surcharge is a reduction of approximately $503,000 a year in Wireless E-911 Fund revenue from those providers currently remitting it. The impact of including prepaid wireless in the surcharge is an increase of approximately $540,000 a year to the Wireless E-911 Fund.

After significant discussion and input from those in attendance at the Board meeting, the Board decided that prepaid wireless service should be included in the collection of the surcharge. This was primarily because excluding prepaid wireless service would create an inequity between prepaid and post-paid subscribers, which some Board members felt was as bad as the original problem being addressed. The next issue the Board had to address was how it should be included. Based on input from the wireless service providers, there are two ways to do this. First, the surcharge could be added at the point of sale. This would involve an additional $0.75 being included in the purchase price of the service. According to some of the providers interviewed, this seemed to be the favorable method of delivery. The State of Maryland currently uses this method of collection. The disadvantages of this method are that a person may only be billed for one month of surcharge and get a greater amount of service or may get billed more than $0.75 per month if they purchase more than one prepaid wireless service during one month.

The second method of collection is for the wireless service provider to count the number of prepaid customers on the first of the month and remit funding for $0.75 times this count. Since an address is not always available for prepaid customers, the count would need to be based on the telephone number of the prepaid service. To offset the cost of the surcharge, the wireless service provider can subtract the $0.75 from the subscriber's account balance as a cash value or as an equivalent number of minutes. Most of the wireless service providers currently collecting the surcharge use this method. The Board decided that either method appeared to be acceptable and should be allowable in the proposed legislation.

The second legislative initiative is to allow Board members that are unable to attend a meeting to designate an alternate for that meeting with full authority to vote and be counted toward the quorum of the Board. The Board is required by §56-484.13 of the Code of Virginia to meet monthly until June 2002 then quarterly thereafter. Not all fourteen members of the Board are able to attend every meeting. With the quantity of meetings the Board is required to and needs to hold, it is sometimes difficult to reach a quorum (eight members) of Board members. During the past year, the Board has been unable to convene a quorum on two occasions and on one occasion a member had to leave pressing business in Charlottesville to come to Richmond in order to take several important votes.

Wireless Enhanced 9-1-1

Introduction

Today's society is becoming more and more mobile. Current estimates place the number of wireless telephones in the United States at over 120 million (2.5 million in Virginia in June 2001) with 40,000 being added each day. Public safety answering points (PSAP) around the nation have reported that the percentage of calls coming from wireless telephones is increasing at an exponential rate. Of concern to the PSAPs is that wireless calls to 9-1-1 do not provide the location of the caller the way wireline enhanced 9-1-1 does. This lack of an automatic location results in more time for the call taker to process the call or an inability to locate the caller at all. Several recent incidents have occurred around the country that demonstrate the problems PSAPs can have locating a wireless 9-1-1 caller.

To respond to this issue, in 1996, the FCC released an order requiring wireless service providers to implement enhanced features and location technology. The implementation was to occur in two phases. Phase I provides the PSAP with the caller's telephone number and the address of the cell site receiving the call along with the orientation of the antenna, if the antenna is directional. Phase II provides the PSAP with the actual location of the caller within a defined margin of error depending on the location technology used by the

Phase II Error/Timing

Network based solution:

Accuracy

- 100 meter accuracy 67% of the time
- 300 meter accuracy 95% of the time

Timing

- Six months after request must implement 50% of network
- 100% of network within 18 months of request

Handset based solution:

Accuracy

- 50 meter accuracy 67% of the time
- 150 meter accuracy 95% of the time

Timing

- Must offer handsets with GPS capability by October 2001
- 25% of new handsets must be GPS capable by December 31, 2001
- 50% of new handsets must be GPS capable by June 30, 2002
- 100% of new handsets must be GPS capable by December 31, 2002
- 95% of all customers must be converted to GPS capable handsets by December 31, 2005

provider (see sidebar). According to the order, the wireless service provider must implement Phase I within six months of a request from the PSAP. The timeline for Phase II is contingent on the location technology selected by the wireless service provider, network-based (triangulation) or handset-based (global positioning system – GPS).

Wireless Funding

The Wireless E-911 Fund is generated by a $0.75 surcharge placed on every wireless telephone billed by a wireless service provider in Virginia. The fund currently generates approximately $1.8 million each month. The Wireless E-911 Services Board began providing this funding to PSAPs and wireless service providers in the FY2000 budget year. In the first year, 22 localities received a total of $4.02 million. This was about $350,000 less than had been originally requested by the PSAPs at the beginning of the year. The difference was caused by a number of factors, including inaccurate estimates of call load data, requesting funding for equipment that turned out to be unnecessary, and over-estimating other project costs. Not all PSAPs had to return funding to the Board. Seven PSAPs received additional funding because of conservative initial estimates. The Board expects that much of the inaccuracy is due to a lack of experience with wireless data and that accuracy will improve in the coming years. The twelve wireless service providers serving those localities requested approximately $4 million to support the PSAP requests; however, the providers actually spent only $667,557 during FY2000 due to delays with implementations.

The Board originally approved 35 PSAP submissions for FY2001; however, six additional submissions were approved. A total of $6.7 million was paid to PSAPs during FY2001. Many of the first time submissions included one-time purchases that will not be included in future submissions to the Board. After the initial installation, most submissions simply include equipment maintenance, trunking costs, and personnel costs. The Board is currently conducting the audit process for FY2001, which the *Code* requires to be conducted at the end of each fiscal year.

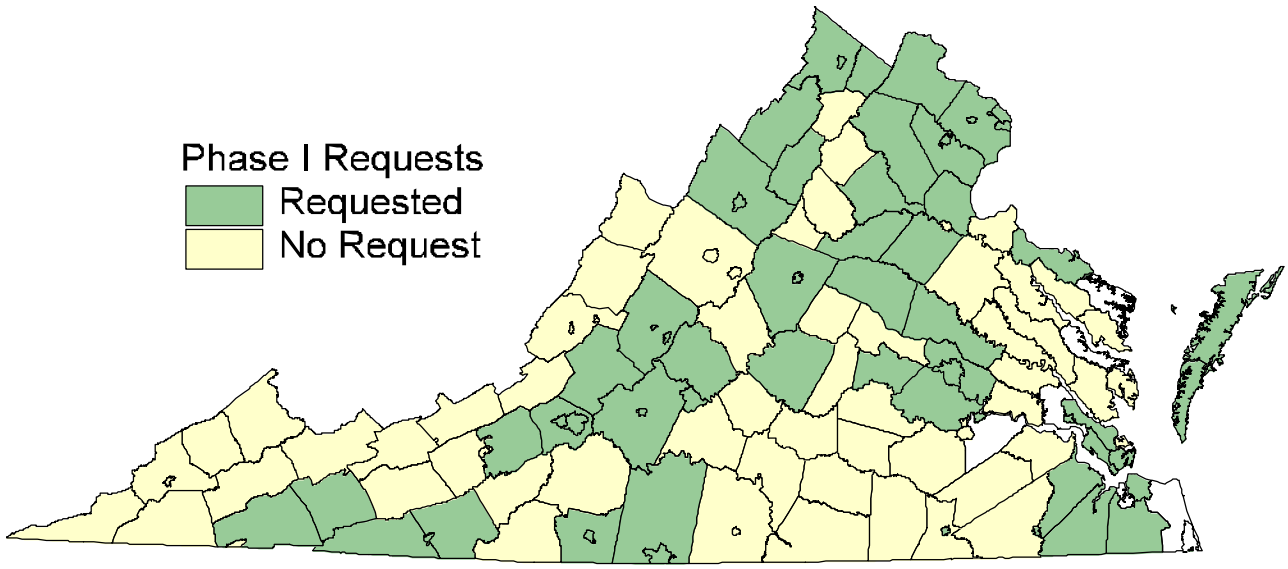

Figure 1 - Localities making an FY2002 funding request

The wireless service providers submitted funding requests for FY2001 totaling an estimated $4.4 million; however, only $2.4 million was paid to the providers during the year. The majority of the costs were derived from monthly recurring costs, such as trunking and third party provider costs.

The monthly recurring costs do not start until service is implemented and many installations continue to be delayed resulting in the lower than expected costs. The wireless service providers are also participating in the audit process currently being conducted.

For FY2002, the Board has approved 57 PSAP submissions, which serve 73 localities in the Commonwealth (Figure 1), totaling over $7.6 million (Figure 2). While this represents a significant increase from FY2001, it is less than the number expected, considering the statutory requirement for implementation of wireless 9-1-1 by July 1, 2002 for any PSAP that was wireline enhanced 9-1-1 capable by July 1, 2000. Since a total of 33 jurisdictions were not wireline enhanced 9-1-1 by July 1, 2000, there are 103 localities required to implement wireless 9-1-1 by the end of FY2002. Though the *Code* only requires localities to take the wireless 9-1-1 call from the State Police (commonly referred to as Phase 0), most localities decide to implement wireless Phase I, giving them the additional information about the caller and access to the Wireless E-911 Fund. It is unclear at this time if the 31 localities that have not made a request to the Board are simply planning to implement Phase 0 or will be submitting a request in the future. DPSC staff has been aggressively contacting these localities and making them aware of the statutory requirements and funding opportunities. These contacts have led to several new submissions being received and several regional efforts being initiated.

Jurisdiction	FY2000	FY2001	FY2002
Alexandria, City of (Police)	$149,045.00	$126,291.00	$156,998.51
Amherst County			$126,366.53
Arlington County	$193,039.00	$283,021.00	$216,336.00
Bedford County		$153,536.00	$49,775.28
Blacksburg, Town of			$83,655.00
Botetourt County			$42,346.00
Buckingham County			$26,486.00
Charlottesville, UVA, Albemarle Co.	$185,610.00	$137,735.53	$246,790.00
Chesapeake, City of	$112,982.00	$136,149.00	$152,650.00
Chesterfield County	$116,323.00	$282,964.00	$181,527.00
Christiansburg, City of		$96,913.00	$8,000.00
Clarke County		$65,067.00	$18,343.00
Culpeper County		$39,310.00	$53,094.00
Danville, City of		$147,606.00	$76,751.57
Eastern Shore 9-1-1	$109,561.00	$44,295.21	$47,412.62
Emporia, City of			$51,314.00
Fairfax County	$1,249,602.00	$1,636,330.00	$1,979,879.00
Franklin, City of			$54,142.25
Frederick County		$83,172.00	$20,284.66
Hampton, City of	$206,029.00	$105,142.00	$85,744.00
Hanover County		$171,876.58	$266,730.49
Harrisonburg - Rockingham 9-1-1	$106,575.08	$167,201.19	$167,201.19
Henrico County	$132,741.00	$241,833.00	$133,395.00
Hopewell, City of			$109,379.00
Isle of Wight County			$59,084.00
James City County		$99,109.00	$55,509.00
Loudoun County	$83,523.00	$91,722.00	$110,058.00
Louisa County		$50,573.37	$77,879.00
Lynchburg, City of	$127,130.00	$79,211.00	$173,797.00
Martinsville – Henry County 9-1-1		$41,862.00	$55,106.00

Figure 2 - Jurisdictions seeking funding from the Wireless E-911 Services Board (part 1)

Middlesex County		$48,719.20	$0.00
Montgomery County		$71,925.00	$6,849.00
Newport News, City of	$170,684.00	$119,163.20	$140,101.00
Norfolk, City of	$192,593.00	$253,711.00	$445,105.00
Orange County		$131,091.13	$52,526.00
Page County			
Pittsylvania County		$87,481.00	$22,299.00
Portsmouth, City of	$130,134.00	$121,006.00	$133,285.00
Powhatan County	$5,613.00	$86,676.00	$28,568.00
Prince William County	$347,277.00	$477,032.00	$457,167.00
Richmond, City of	$89,740.00	$140,812.00	$143,825.00
Roanoke County			$211,885.75
Roanoke, City of			$232,418.00
Rockbridge Regional 9-1-1		$1,236.00	$48,308.00
Salem, City of			$87,085.00
Shenandoah County	$62,155.89	$124,381.00	$40,400.00
Smyth County			$23,043.00
Spotsylvania County			$41,956.68
Stafford County			$95,969.65
Suffolk, City of	$35,051.00	$177,285.75	$45,565.00
Twin Counties 9-1-1		$67,977.00	$79,184.00
Virginia Beach, City of	$159,504.00	$248,675.00	$385,175.00
Warrenton - Fauquier Joint 9-1-1		$43,477.00	$50,213.00
Washington County			$47,871.00
Westmoreland County		$32,194.60	$7,932.00
Williamsburg, City of			$64,179.00
Winchester, City of		$78,365.02	$34,055.00
York County	$57,286.00	$63,873.00	$51,076.84
Total	**$4,022,197.97**	**$6,659,860.81**	**$7,674,001.02**

Figure 2 - Jurisdictions seeking funding from the Wireless E-911 Services Board (part 2)

The Board recently considered the issue of funding for Phase II service. As a result of discussions, the Board has approved two sets of guidelines, one for PSAPs and one for wireless service providers. The primary difference between Phase I and Phase II is the addition of mapping within the PSAP. To provide this, the Board has included funding for the creation of mapping data for the locality and for the mapping display system to be used by the 9-1-1 call takers. As not to delay the implementation process, localities that are prepared to implement Phase II have been encouraged to make a funding submission for the remainder of FY2002.

One outstanding issue is the determination of how the Board should provide the funding for the creation of the mapping data. There are two options. The first, an incremental approach, would provide funding directly to each locality that currently does not have mapping data already available. The amount of funding would be based on the composite index for the locality. The second, a statewide approach, would conduct the mapping initiative as a partner with the Virginia Geographical Information Network (VGIN) effort.

To resolve which method provides the better solution, the Board is contracting with a consultant to study Phase II costs in the Commonwealth. While VGIN has developed a cost for the statewide approach, the study will help define the cost of the incremental approach by surveying each locality's current capability. The study will also inventory and evaluate the PSAP's readiness for

Phase II determining if a mapping display system is available to the PSAP. If one does not exist, the study will provide the PSAP with options for satisfying the requirement and the Board with the projected costs of those options. The end result of the study should be a clear picture of the total cost to implement Phase II service over the next several years. The study should be completed by December 2001. The goal is to conduct whatever aerial photography is necessary (local or statewide) during the winter of 2002 (February to April 2002) before the spring foliage emerges.

The wireless service provider guidelines for Phase II allow the providers to submit a request for any costs associated with implementation of wireless E-911 Phase II. Due to the complexity and varied approaches to implementation, the Wireless Carrier E-911 Cost Recovery Subcommittee will evaluate each request individually.

The Wireless E-911 Fund

The Wireless E-911 Fund had a balance of approximately $38 million at the end of FY2001. This raises an important question: Should the surcharge rate be lowered? Projections for statewide deployment indicate that the surcharge rate should not be lowered. The annual PSAP costs of statewide deployment of wireless enhanced 9-1-1 Phase I is approximately $11.5 million. This is based on the average call load data reported to the Board and the operating costs reported in the 1999 Auditor of Public Accounts audit of the local 9-1-1 surcharge. Using the average cost per subscriber per month from the wireless service provider's submissions, the amount needed to fund the wireless service provider costs is approximately $10 million. The projected revenue for this same number of subscribers is approximately $25 million. This means that the revenue generated by the $0.75 surcharge is adequate to fund the costs for Phase I.

It is important to note two issues for the future. First, the wireless service provider's costs for Phase I appear to be declining. As more systems become operational, the cost is going down per subscriber. In fact, one provider, AT&T Wireless, has announced that they will no longer be seeking cost recovery for Phase I service. Second, Phase II implementations will begin by the end of FY2002. Phase II costs are not included in the above projections and most Phase I costs will continue in Phase II. However, the majority of Phase II costs are non-recurring costs and can be covered by the existing fund balance.

Unfortunately, accurate projections of the cost of Phase II are not possible at this time. The previously discussed consultant study will help define the PSAP costs and the wireless service provider costs will become much clearer after they submit their funding requests, which are due December 31, 2001. Until more accurate figures are available, broad estimates must be made (Figure 3).

Description	Estimated Cost
Statewide Base Mapping (Imagery)	$10 million
Statewide Base Mapping (street centerline)	$10 million
PSAP Mapping Display Systems	$5 million
Wireless Provider Phase II Cost (non-recurring)	$10 million

Figure 3 - Estimated Phase II Costs

There are also other related projects that should be considered for funding from the Wireless E-911 Fund. The Governor's FY2002 revised budget included an appropriation of $9.8 million from the Wireless E-911 Fund to be used for grants to localities to assist with the implementation of wireline enhanced 9-1-1. While the *Code* does not specifically allow the Board to use wireless funding for this purpose, wireline enhanced 9-1-1 is required to implement wireless enhanced 9-1-1, so this is viewed as an appropriate use of the fund. Since the amended budget was not approved last year and the need for funding still exists, the Board will seek permission to use the Wireless E-911 Fund for wireline grants again in the coming budget process.

Phase I Project Status

To date, ten localities have been able to implement wireless E-911 Phase I (call back number and cell site location) with all of the wireless service providers serving the locality. Thirty-one other localities have implemented with at least one of their providers (Figure 4). This is nearly twice as many as six months ago.

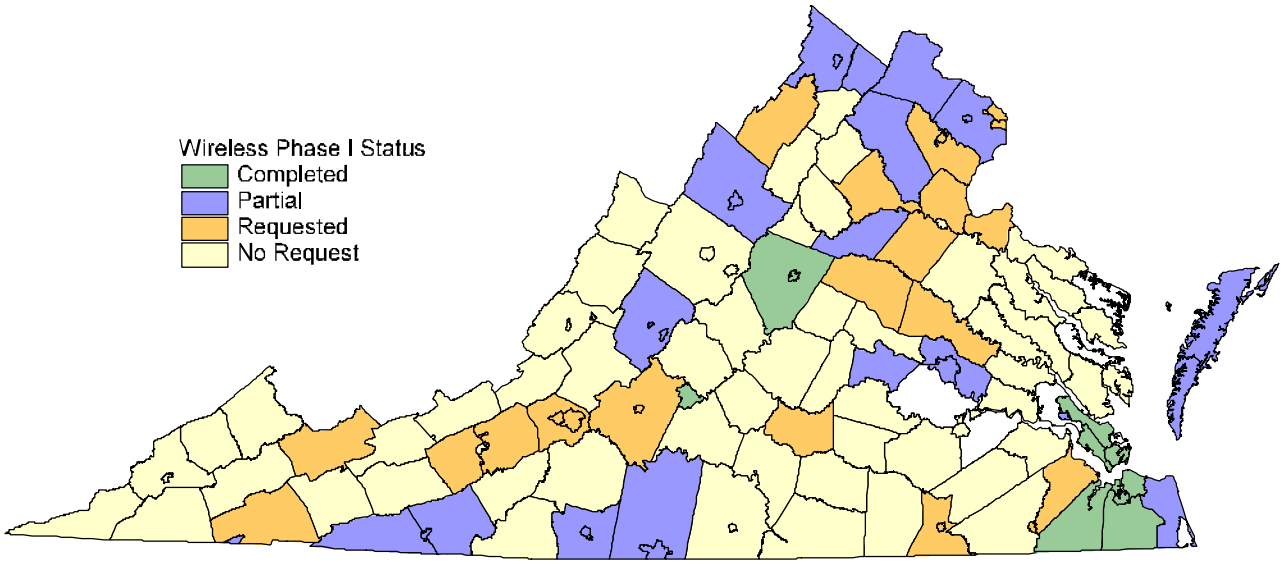

Figure 4 - Wireless E-911 Phase I Implementations

Though greater success is being realized, many of the implementations are still more than two years old despite the fact that the FCC order requires implementation in six months. As an example, the five Northern Virginia localities as a group requested Phase I in April of 1999. As of September 1, 2001, only one provider is providing Phase I service in Fairfax County and Loudoun County. Though there is a multitude of reasons for the delays, it should be noted that some providers have been more successful than others have.

The Board has expressed a large degree of frustration with the lack of progress. In general, it does not appear that the delay is being caused by the localities. Early delays were the result of a lack of preparedness by wireless service providers and wireline telephone companies. To identify the current delays, the Board conducted status reviews of each wireless service provider and the wireline telephone companies over several Board meetings. During these status reports several wireless service providers were lauded for their hard work and apparent dedication to the implementation of Phase I service. Though their implementations were not always within the six-month window directed by the FCC, the delays were attributable to the newness of the technology. Other providers were challenged by the Board to improve their performance with the

implementation of service. Wireless service providers are now required to provide the Board with monthly status reports, which are posted on the DPSC website. These reports have been mapped to provide a visual status for each provider (Figures 5-18). The "Requested" status does mean that the PSAP has requested service and that it has not yet been installed, but it does not necessarily mean that the project is behind schedule. Some PSAPs have only recently requested service with anticipated implementations in January 2002 or later.

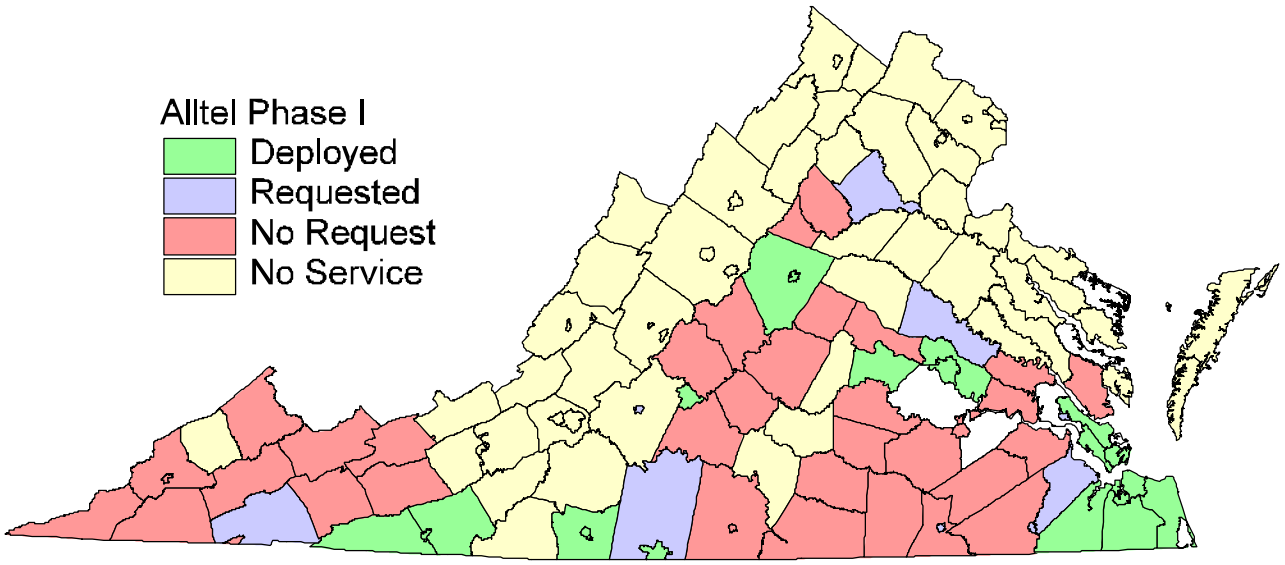

Figure 5 - Alltel Phase I Status

Alltel has completed installation in most of the areas requesting service. Those requests still pending are mostly recent requests for service or places where a PSAP upgrade must occur before implementation can take place. Alltel was the first provider to implement Phase I service for a PSAP in southwest Virginia.

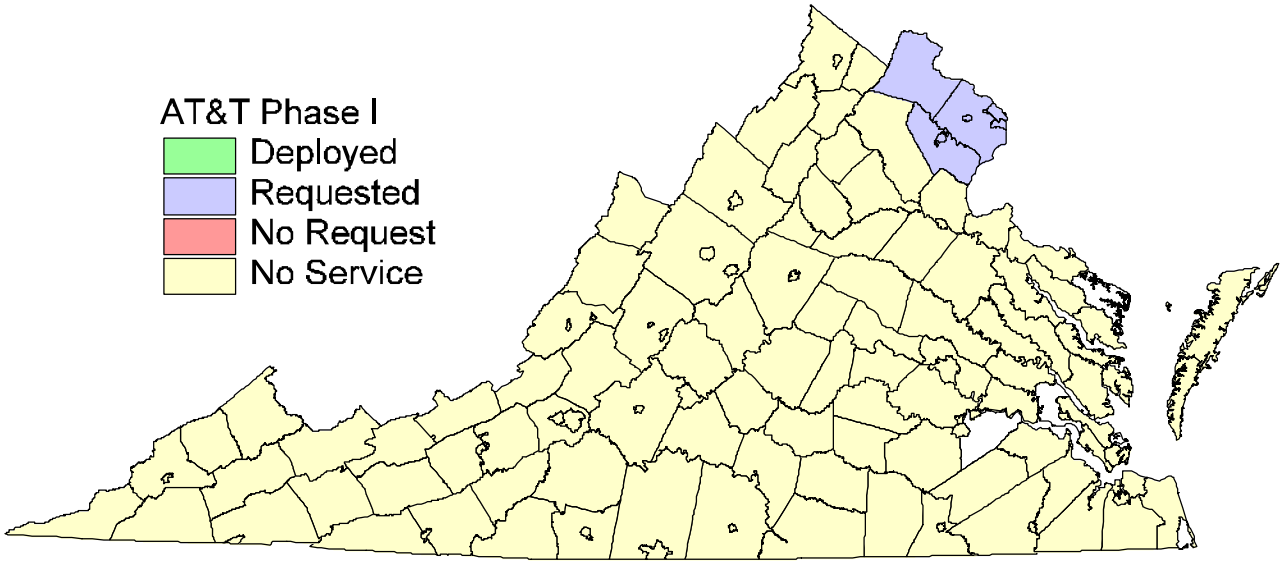

Figure 6 - AT&T Wireless Phase I Status

AT&T Wireless and Cingular are the only national providers yet to complete a deployment in Virginia. AT&T Wireless has a strict corporation policy that they will not begin implementation of service until an interconnection agreement is negotiated with the wireline service provider (Verizon) and a service agreement is completed with the PSAP. As of September 1, 2001, AT&T Wireless has both agreements complete for Northern Virginia and expects their first implementation later this fall.

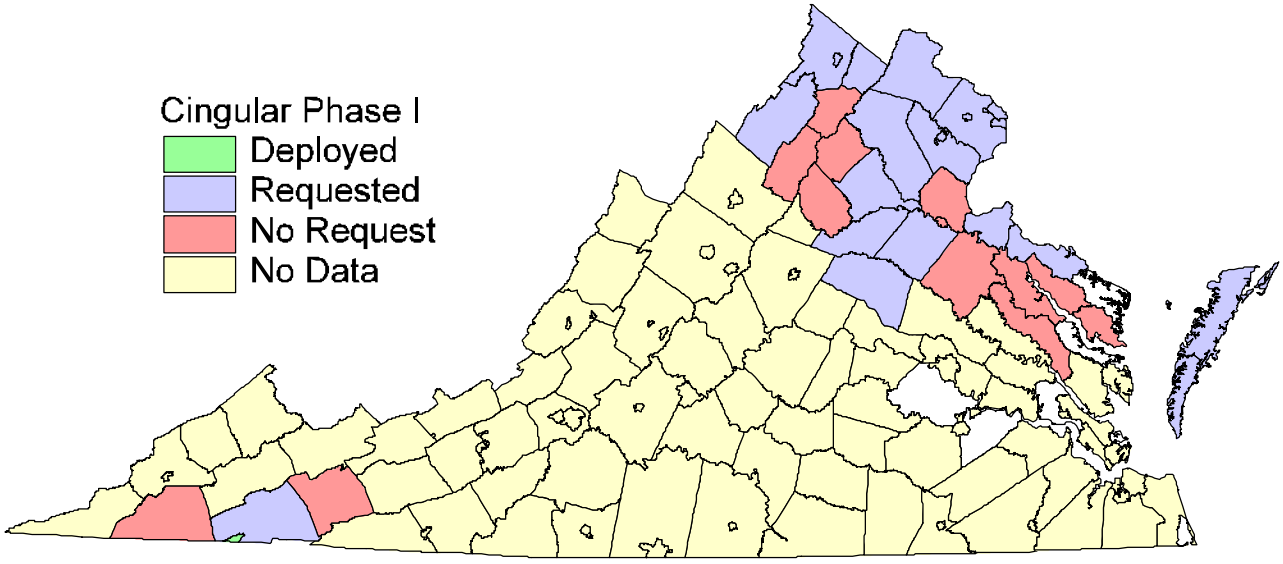

Figure 7 - Cingular Phase I Status

After over a year working with one third party Phase I service provider, Cingular was unable to implement Phase I service. As a result, Cingular canceled service from that company and signed on with another in June 2001. Created from the merger of Bell South and SBC, the new Cingular also established a new requirement for a PSAP service agreement. Cingular reports that service will be implemented within 15 days of the execution of the service agreements.

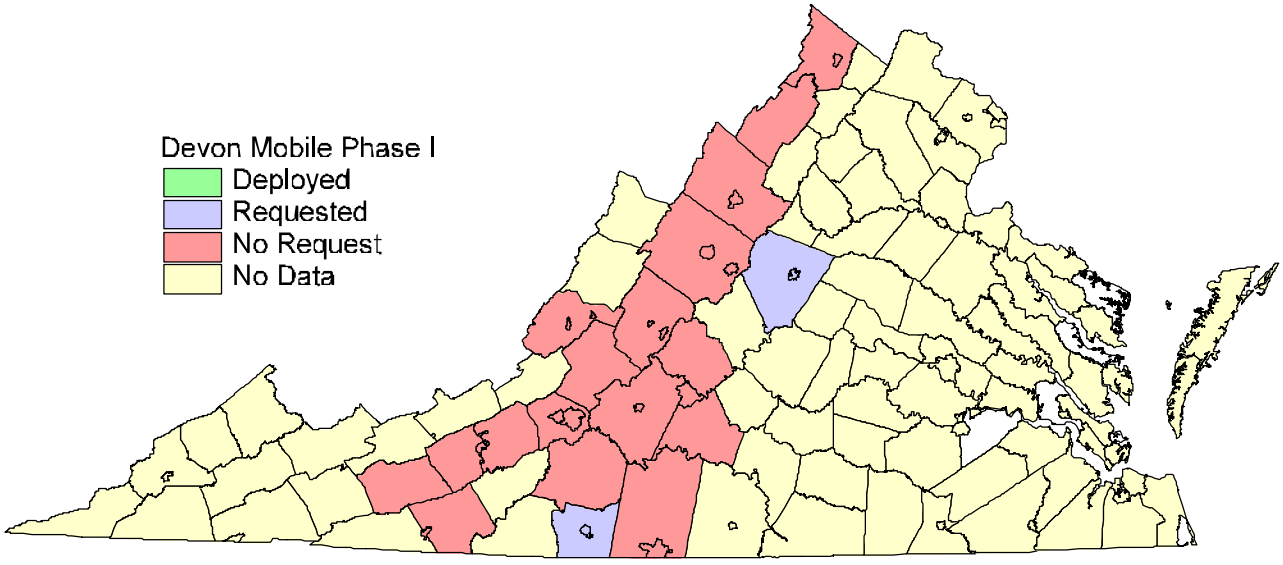

Figure 8 - Devon Mobile Phase I Status

Devon Mobile is a new wireless provider in the Commonwealth providing service only in the last few months.

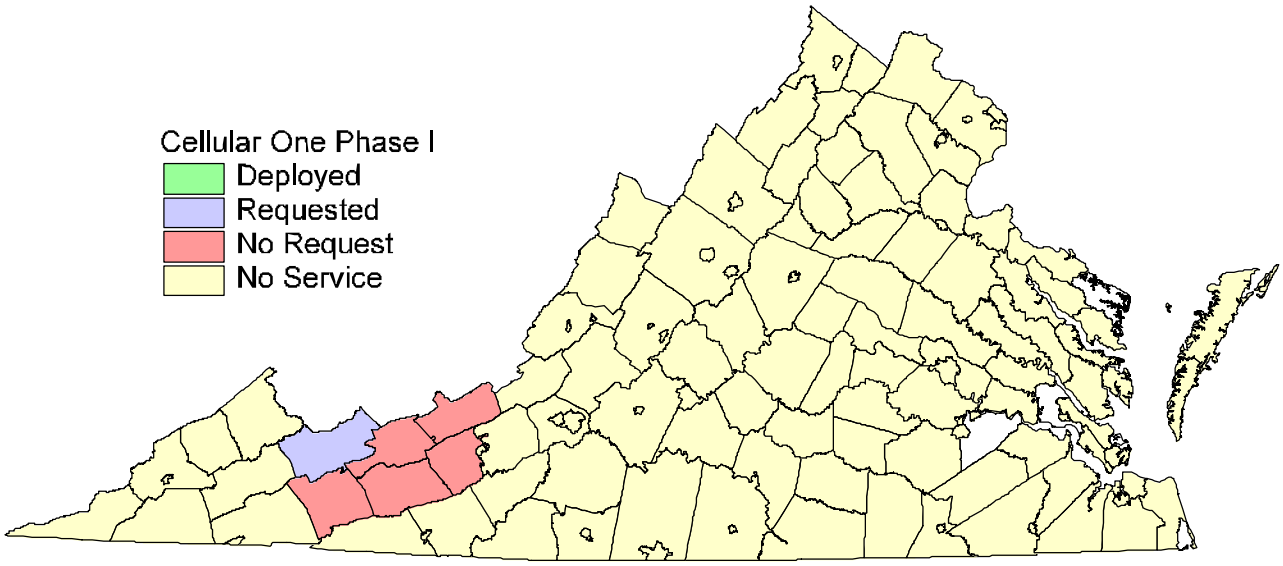

Figure 9 - Cellular One (Highland Cellular) Phase I Status

Cellular One (Highland Cellular) is a West Virginia based company that only offers service in six western localities. Tazewell County is the only locality in this area that has made a request for Phase I service. Currently, Tazewell in not ready to receive the Phase I information from Highland Cellular since they are still in the process of finishing their wireline E-911 implementation.

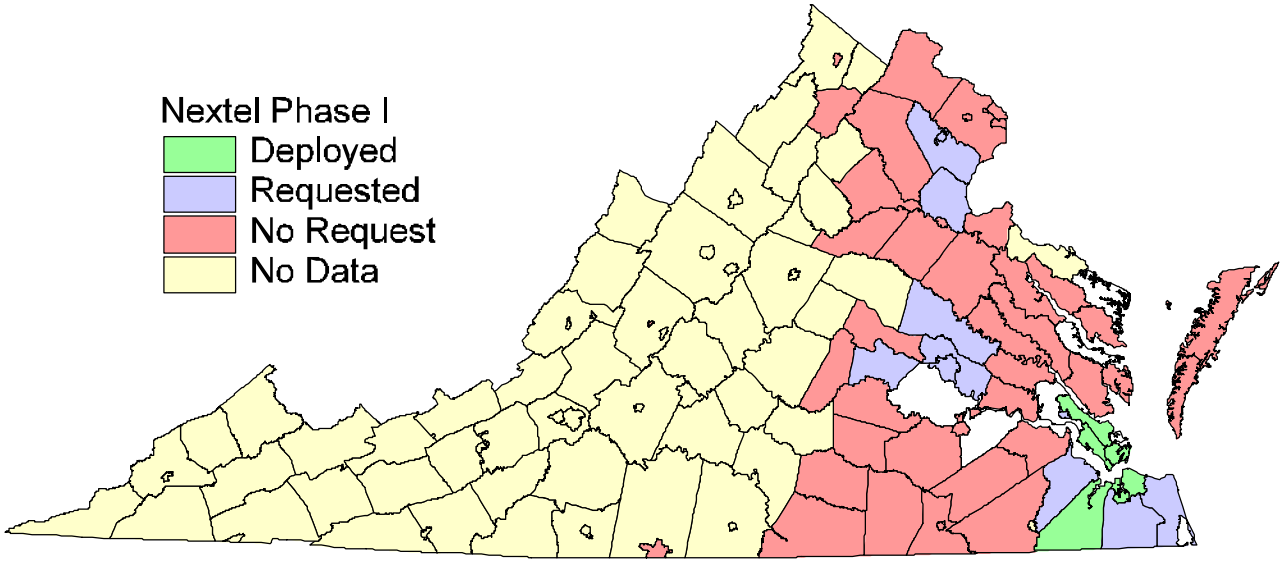

Figure 10 - Nextel Phase I Status

Nextel was delayed in getting started with Phase I implementations. Their mobile switching center required an upgrade from the manufacturer before implementations could proceed. Now the upgrade has been completed, Nextel has begun implementation of service.

Nextel Partners, owned in part by Nextel, is a new entrant to Virginia. They are beginning to implement wireless service along the Interstate 81 corridor. Since Nextel Partners has only been providing service in the Commonwealth for a short time, they have not yet exceeded the allowable implementation period.

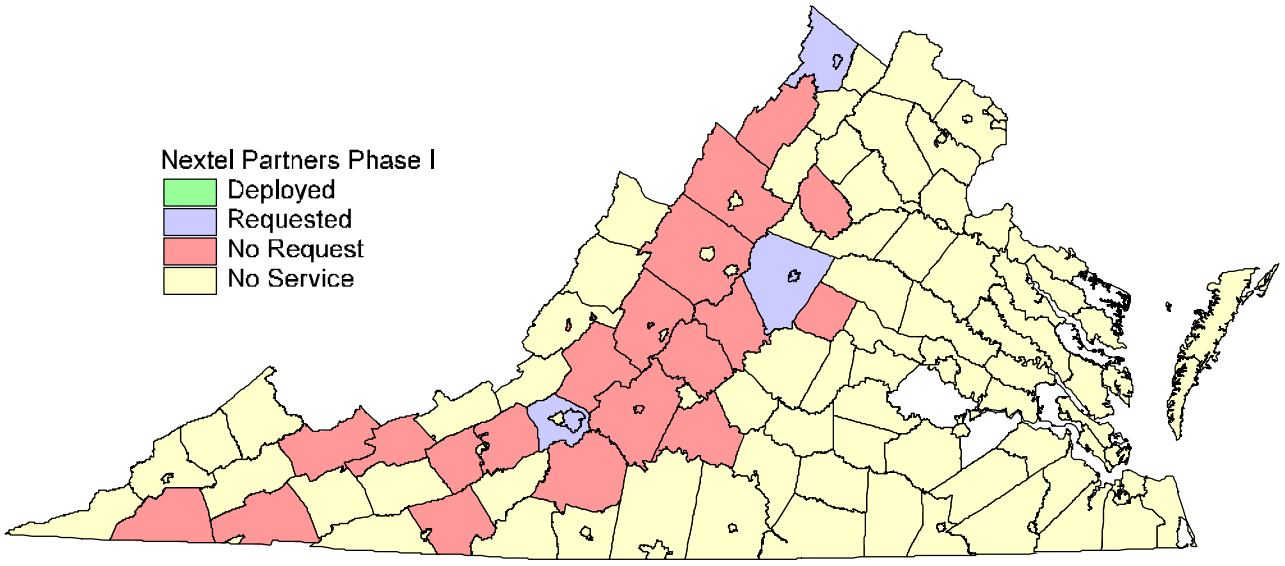

Figure 11 - Nextel Partners Phase I Status

Ntelos has been very aggressive in their implementation of Phase I service. Ntelos was the first wireless service provider in Virginia to implement service. Ntelos, which was formed after CFW Communications purchased the Virginia assets of PrimeCo, continues to demonstrate a strong commitment to the implementation of Phase I by being the first to implement in the Northern Shenandoah Valley.

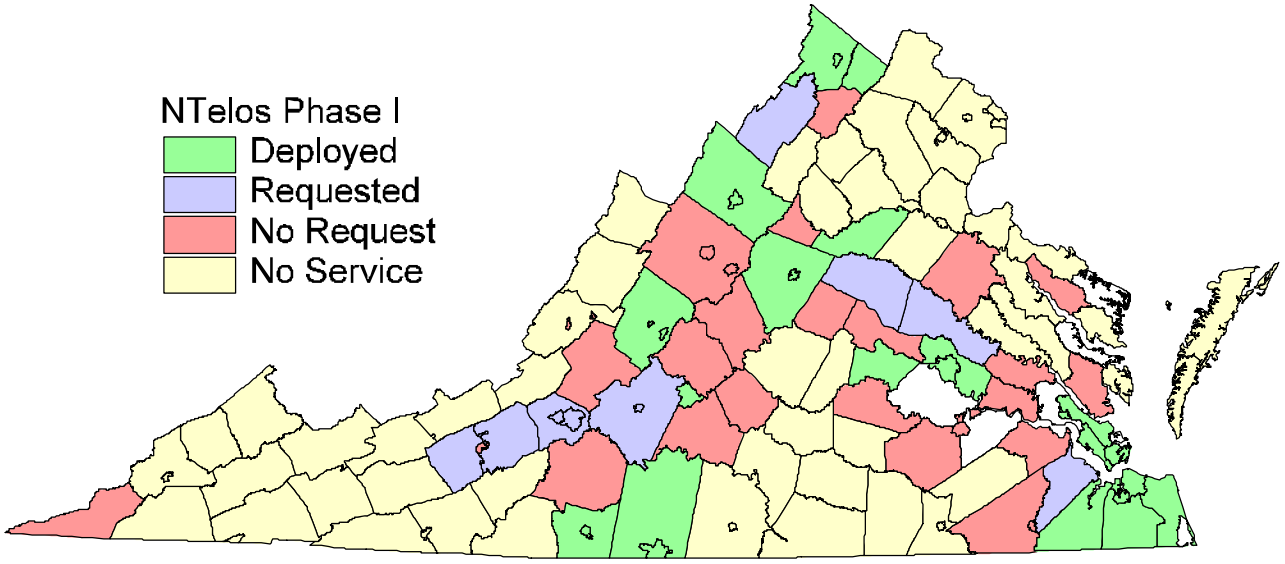

Figure 12 - NTelos Phase I Status

Shenandoah Cellular is a rural wireless service provider serving only seven localities. Shenandoah Cellular actually uses Verizon Wireless' switching infrastructure in the provision of service. It has only been recently recognized that Verizon will need to take action to implement the four localities that have requested service. Verizon is now tracking these localities as part of their monthly report to the Board.

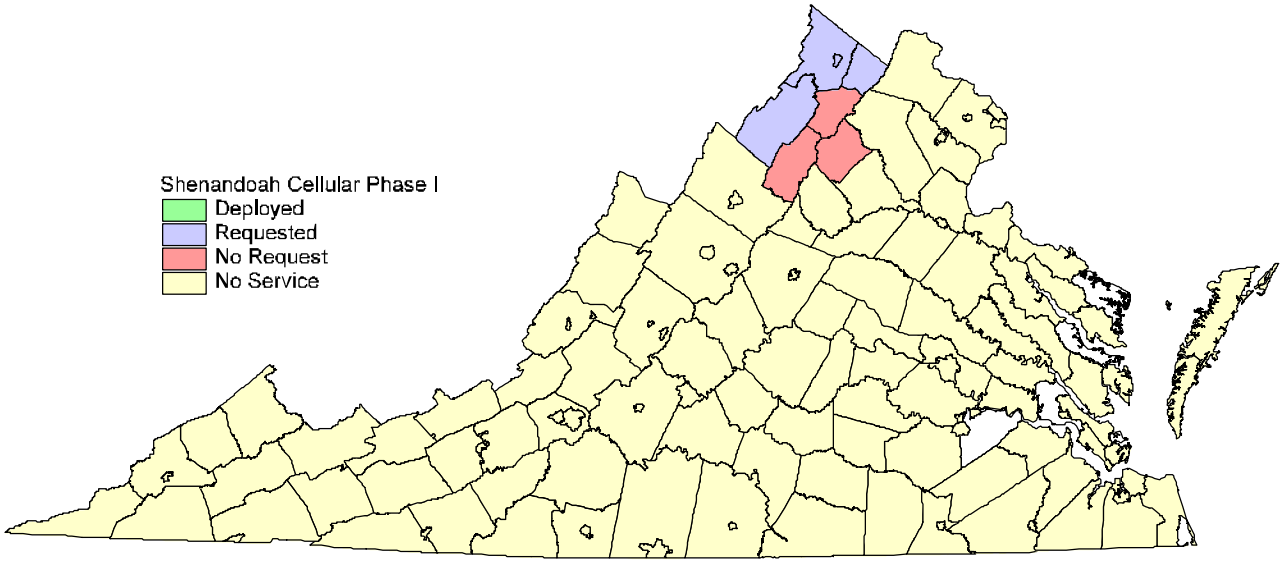

Figure 13 - Shenandoah Cellular Phase I Status

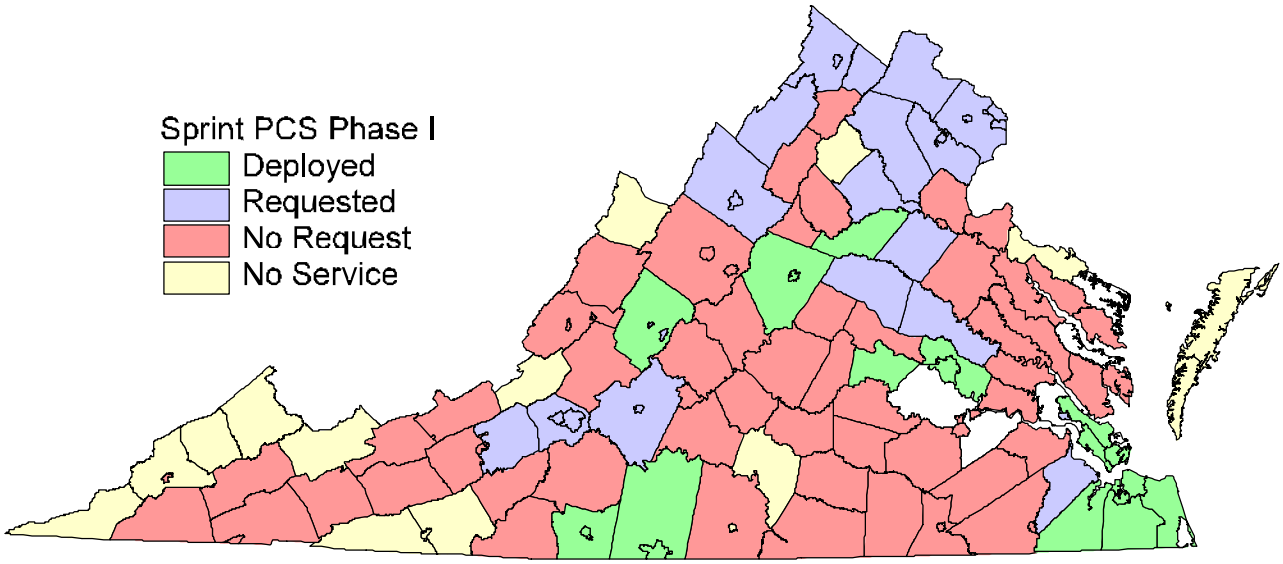

Figure 14 - Sprint PCS Phase I Status

A major equipment problem has prevented Sprint from continuing their implementation of Phase I. In the northern areas of the state, Sprint utilizes a Lucent mobile switching center. Simply put, a working Phase I upgrade for the Lucent switch does not exist. This is a national issue and not unique to Virginia. A solution is expected by year's end.

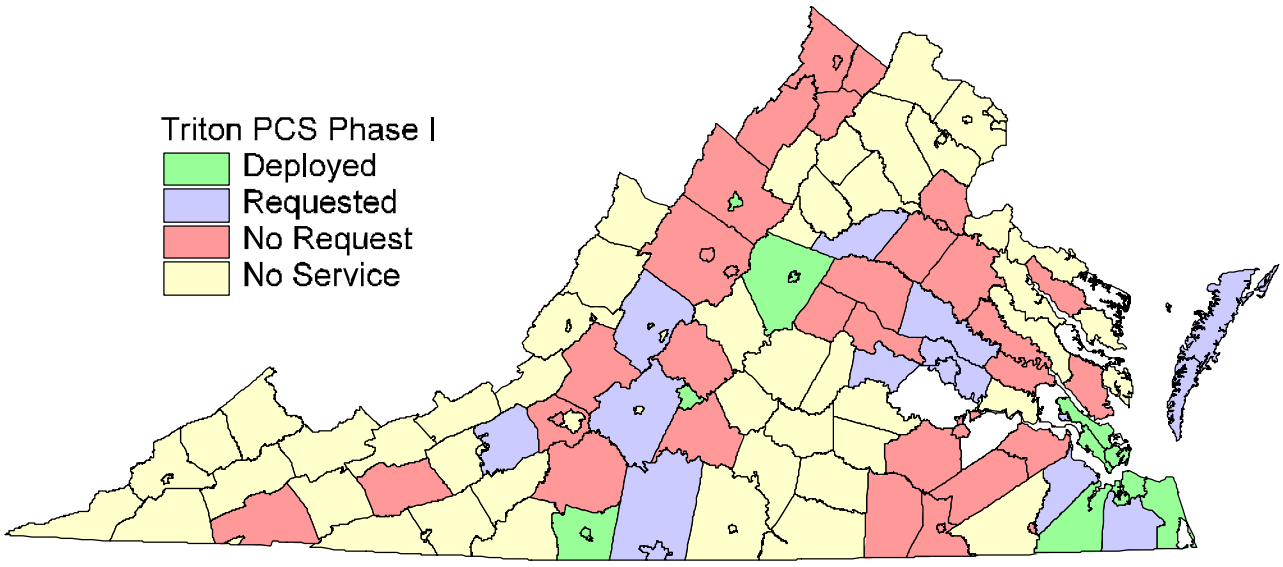

Figure 15 - Triton PCS / Suncom Phase I Status

A change in Phase I solution has slowed implementations by Triton PCS/Suncom. There are two basic solutions to providing Phase I service. Triton PSC/Suncom originally selected a solution known as call-path associated signaling or CAS. After implementing several localities, they changed to a non-call-path associated signaling or NCAS solution. This change has resulted in Triton having to go back to localities that had been implemented and reinstall the new solution.

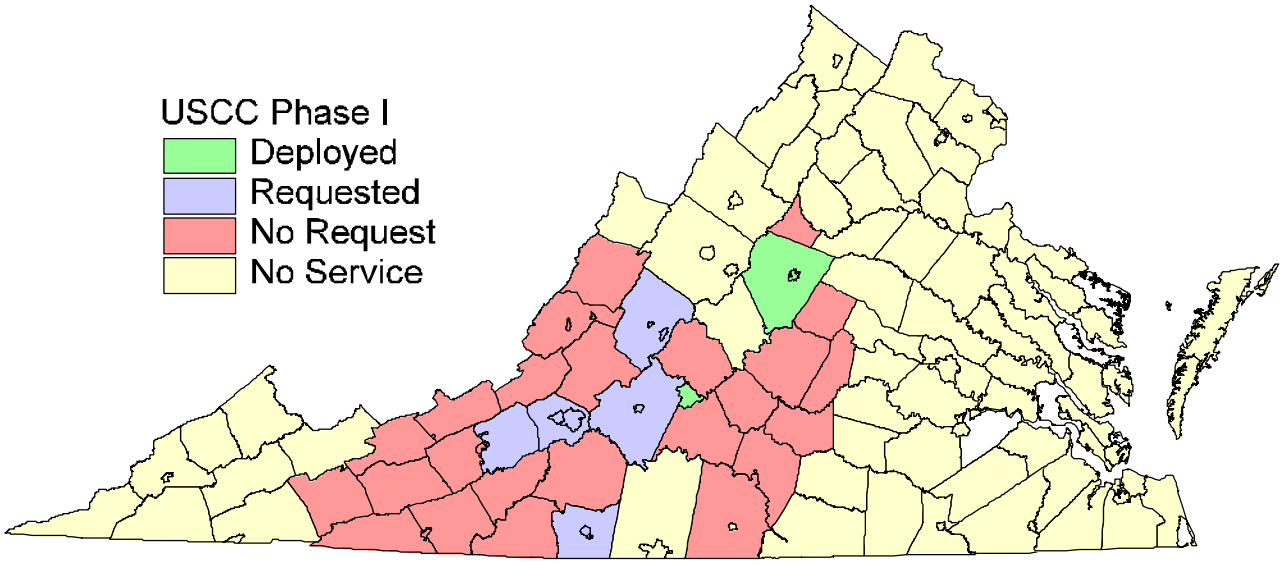

Figure 16 - U.S. Cellular Phase I Status

Few of the localities in U.S. Cellular's service area, which is mostly rural, have requested service. Most of those that have and have not been deployed are still within the six months window for deployment.

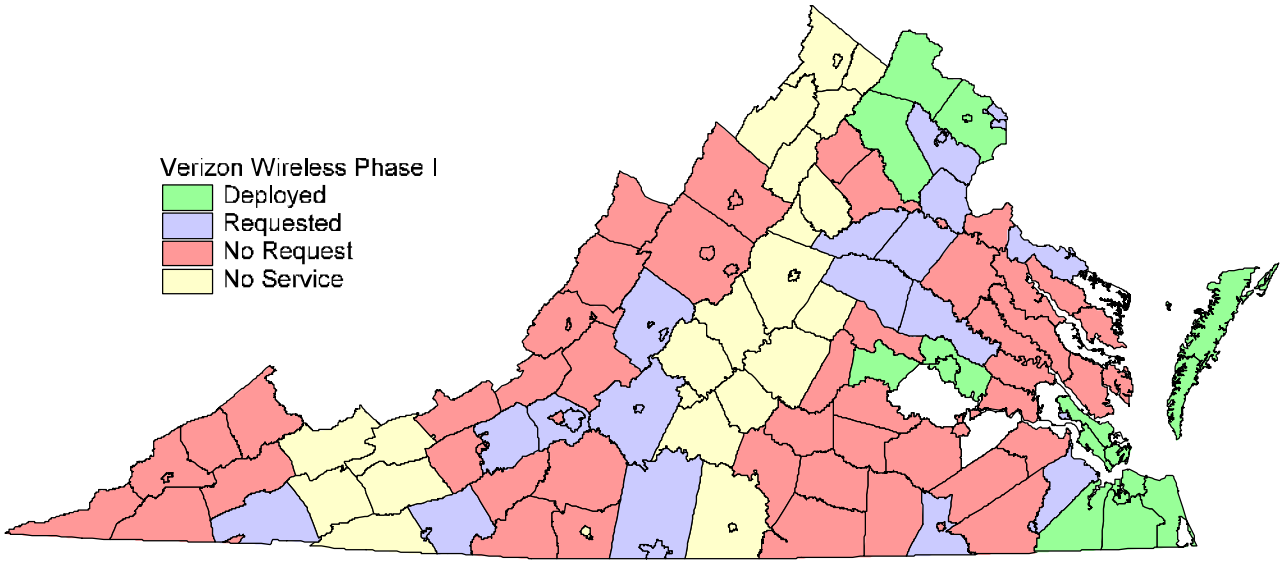

Figure 17 - Verizon Wireless Phase I Status

Verizon Wireless was the second wireless service provider to implement Phase I in Virginia and the only provider to implement to date in Northern Virginia. The areas served by the former GTE Wireless are farther along in the implementation than the former Bell Atlantic Mobile areas. Fortunately, after the merger of the two companies, the new company took its commitment to wireless E-911 from the old GTE Wireless.

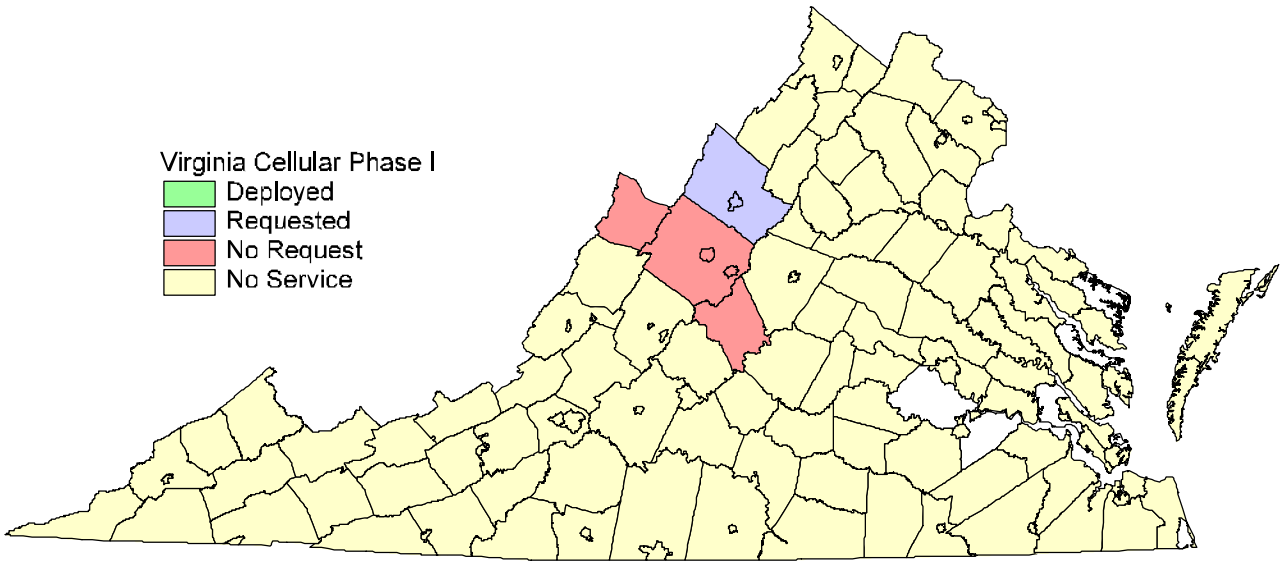

Figure 18 - Virginia Celluar Phase I Status

Virginia Cellular is a small rural provider with only two localities requesting Phase I service. Though service has not yet been provided, Virginia Cellular is working with a third party Phase I service provider to get services implemented.

Phase II Project Status

To date, twenty-four localities have requested Phase II service (Figure 19). Though the FCC order requires implementation to begin by October 1, 2001, every major wireless service provider has sought a waiver of that requirement from the FCC.

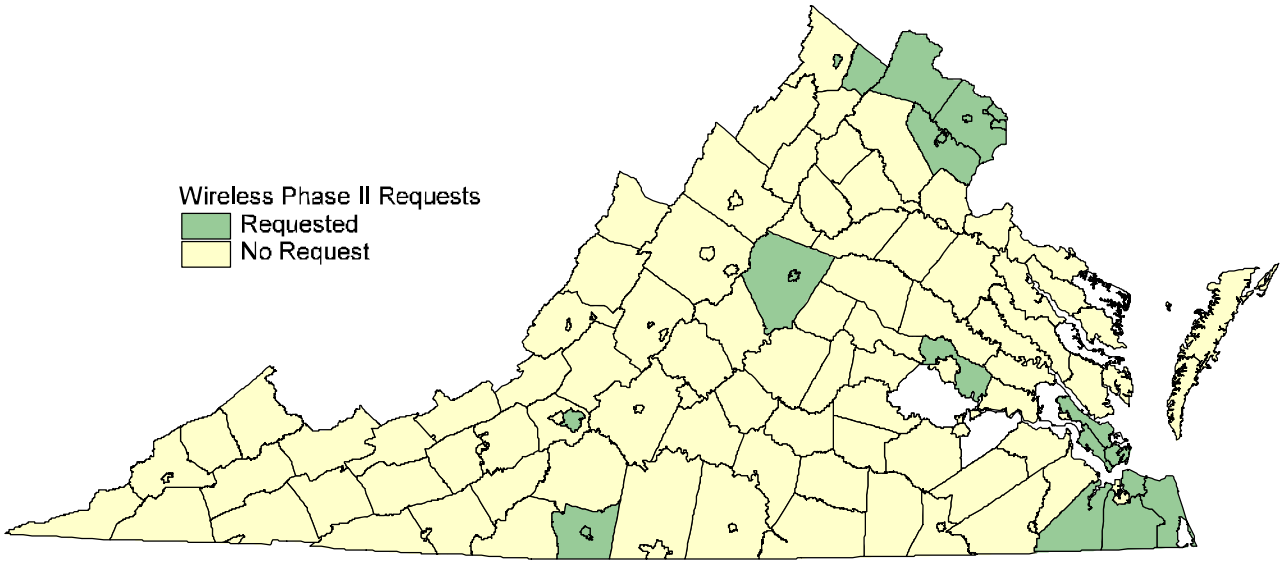

Figure 19 - Wireless E-911 Phase II Status

The waivers seek an extension of time, a relaxing of the accuracy or both. The FCC has only ruled on one of the waivers, VoiceStream Wireless. The FCC approved this waiver request because at the time there was no technological solution for the type of network VoiceStream is using. The still pending waiver requests fall into two general categories. The first group seeks a short to moderate extension of time and commit to meeting the accuracy requirements.

An example in this group is Sprint PCS, who selected a handset-based solution. Their waiver request indicates that they plan to be selling handsets as required by the October 1, 2001 deadline, but will not reach the 25% of new GPS equipped handsets by the end of this year. Likewise, they expect to miss the milestone of 50% of new handsets by June 2002 and 100% of new handsets by December 2002. They have projected that 100% of all new handsets will be GPS equipped by December 2003, one year behind schedule. However, they indicate that they will meet the final goal of having 95% of existing subscribers converted to the GPS equipped handsets by December 31, 2005. Another delaying factor for Sprint is that not all of the mobile switching center manufacturers are ready for Phase II. Sprint has tested the Phase II software for the Lucent switch, but the Nortel and Motorola software will not be available for testing until sometime next year.

The second group of waiver requests proposes an interim solution that does not meet the accuracy requirement. They commit to implementing a solution that will meet the accuracy requirement at some future date when they upgrade their network. An example in this group is AT&T Wireless. Their waiver request indicates that they plan to implement an interim network based solution that uses existing network components. Unfortunately, the accuracy being promised is only 300-meters 67% of the time (Figure 20) and 750-meters 95% of the time (Figure 21). This is significantly higher than 50-meters 67% of the time (Figure 22), which is required of a typical handset based solution.

This location technology would remain in place until AT&T Wireless deploys their new network technology, GSM, at which time they would implement a handset-based solution that should meet the accuracy requirement. It should be noted that at this time the solution they have selected will not meet the 50-meter accuracy requirement, but improved accuracy is expected.

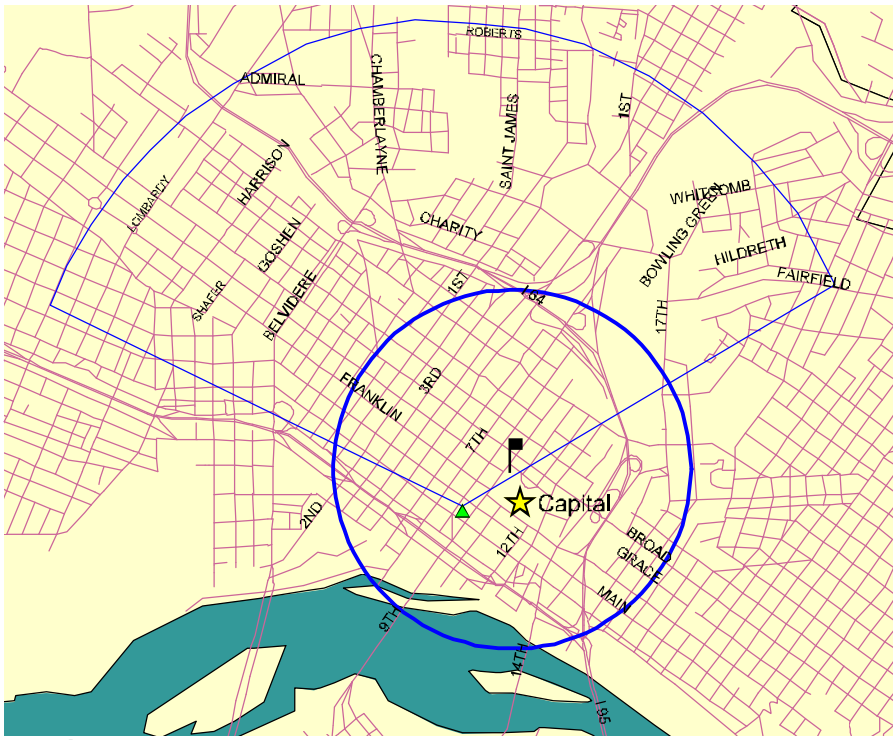

Figure 20 - 750 Meter Area

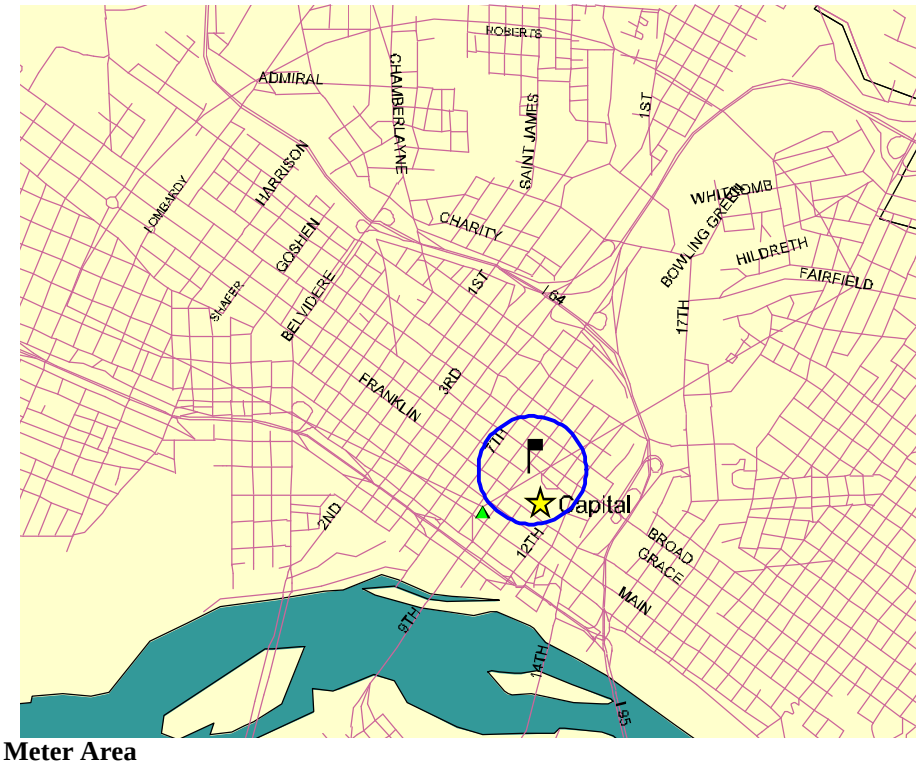

Figure 21 - 300 Meter Area

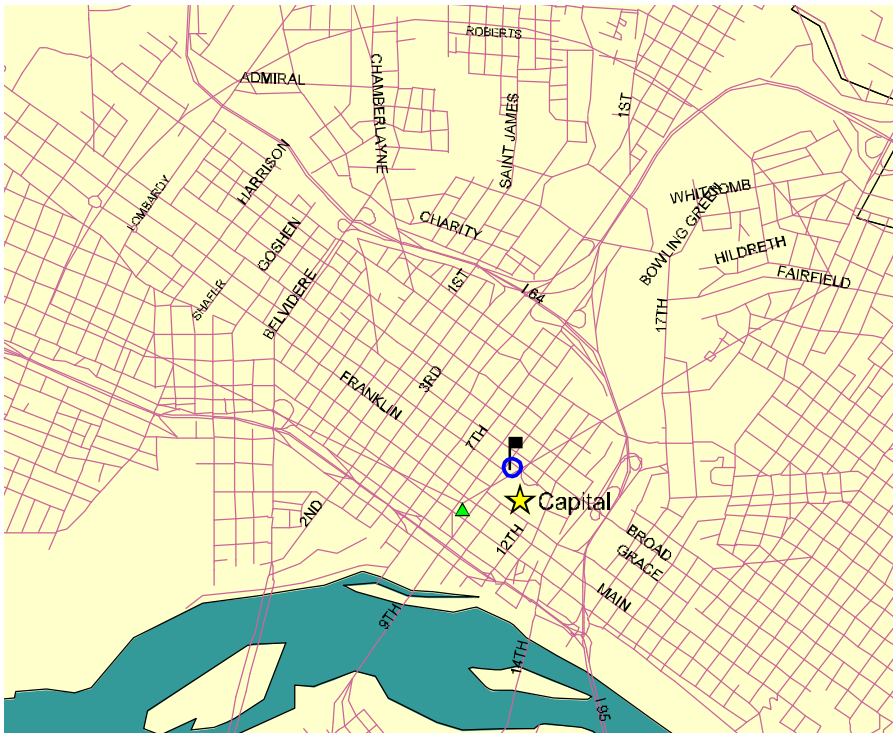

Figure 22 - 50 Meter Area

It is expected that the FCC will act on the pending waiver requests in the coming weeks and months. Several groups are currently lobbying the FCC and Congress for a universal delay of the implementation date rather than having the FCC deal with each request individually. To date, the FCC has not expressed any interest in pushing out the implementation date for everyone. Even with the currently proposed delays in the waiver requests, at least a few Phase II implementations should occur before the end of FY2002. Providers selecting a handset-based solution will be able to roll out service relatively quickly to the entire state; however, it will be of little value until the citizens of the Commonwealth begin exchanging their current handsets for ones with the location technology.

Wireless Responsibility

Section 56-484.16 of the *Code of Virginia* makes clear the General Assembly's intent that wireless 9-1-1 calls should be answered by the local PSAP instead of the State Police. All nine localities required to take the wireless calls from the State Police in the 1999 budget amendment did so by July 1, 2000. Progress has been made in other localities as well (Figure 23).

Localities implementing wireless 9-1-1, as required by the *Code*, are encouraged by the Board to take the extra step to implement wireless enhanced 9-1-1 Phase I. This decision gives the localities greater information (call back number and cell site location) on wireless calls and access to funding from the Board. Consequently, it is anticipated that at least the 73 localities making FY2002 wireless funding requests will take responsibility for the wireless call by July 2002.

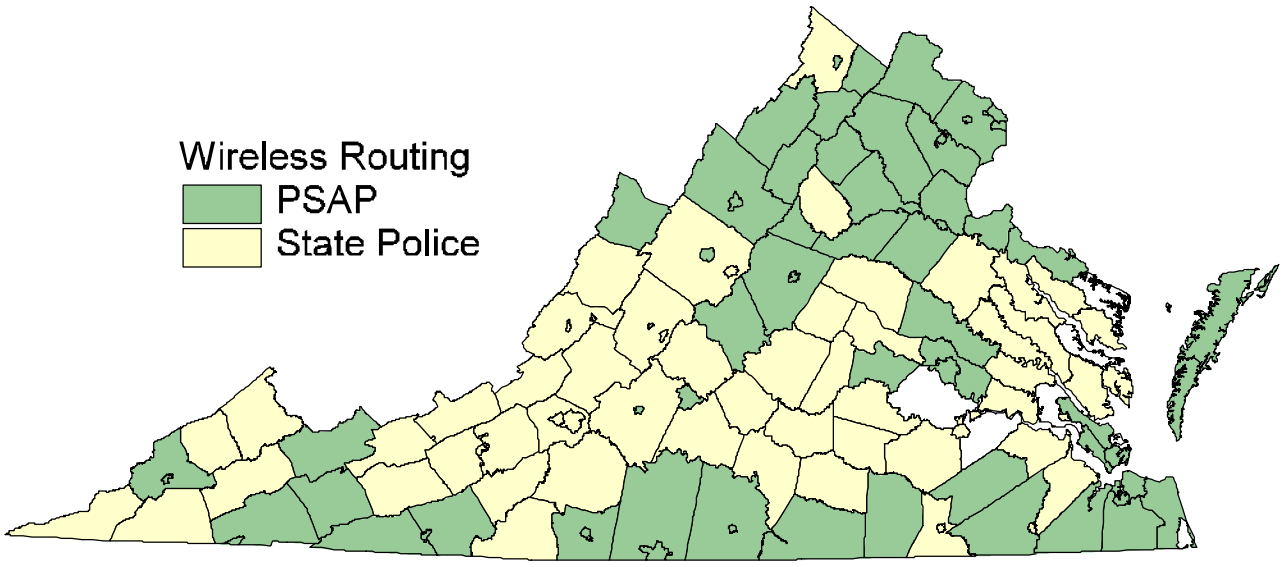

Figure 23 - Responsibility for Wireless 9-1-1

Wireline Enhanced 9-1-1

Localities without Enhanced 9-1-1

As of July 1, 2000, there were 24 jurisdictions (Figure 24 & 25) that did not provide enhanced 9-1-1 service; however, four of those jurisdictions (Essex, Lunenburg, Nelson, and Westmoreland Counties) implemented by the end of FY2001. In addition to these jurisdictions, there are ten more that provide a form of enhanced 9-1-1 that may not be considered as truly enhanced. In these jurisdictions the enhanced 9-1-1 equipment exists, but the location information displayed to the call taker is rural route information or directions and not a street address that has been validated. This may have originally been done as a cost saving measure, as it does not require the locality to map or address the jurisdiction. However, such jurisdictions may need to assign street addresses to the structures throughout these localities in order to become fully enhanced.

Little progress has been made in the deployment of E-911 since the last report. One hindrance continues to be a lack of funding in some localities. While some localities such as Bland, Madison, Fluvanna, Mathews, Buchanan and Dickenson Counties have been able to at least get started with the process, other have not yet begun or do not have the funding to enter into critical contracts. Since no funding was provided this fiscal year, it is not likely that the July 1, 2003 deadline will be attainable by all localities; however, the Board has the authority to grant extensions of time as appropriate. Additionally, the Board has passed two policies to encourage localities to proceed with whatever they can get completed. First, they passed a policy stating that they will look favorably upon requests for extension of time to implement wireline E-911 from localities that were negatively impacted by the lack of funding. The second policy states that localities are eligible for funding expenses incurred after July 1, 2000 even though funding may not be available until FY2003.

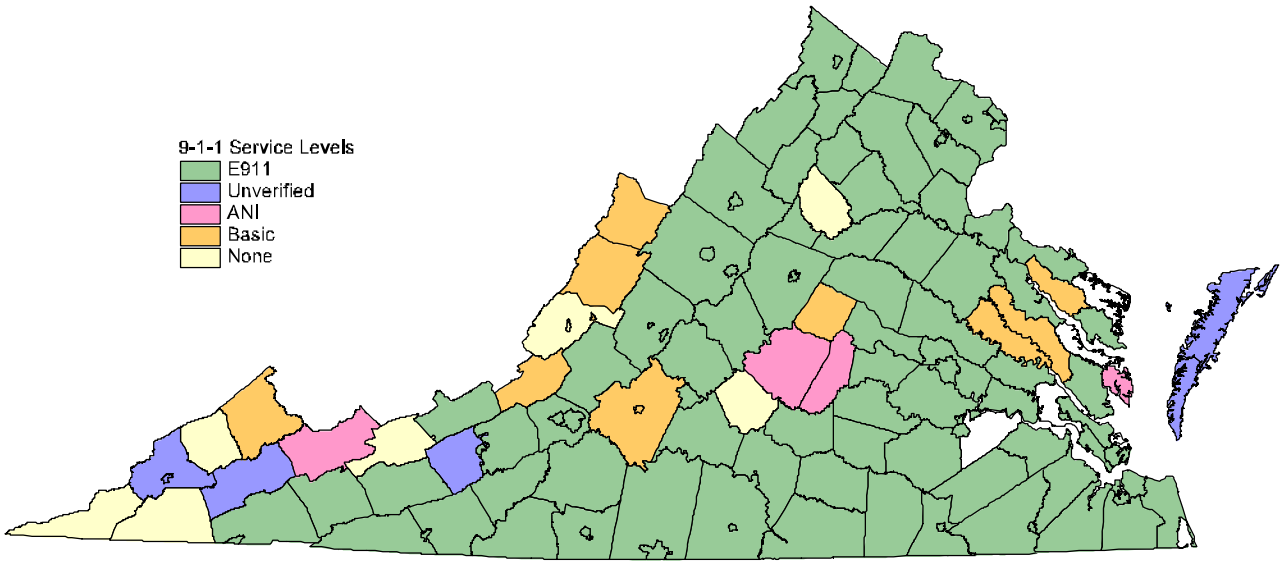

Figure 24 - Wireline enhanced 9-1-1 service levels

The process for implementation of enhanced 9-1-1 can be broken down into two broad processes, (1) the mapping and addressing process and (2) the network and equipment process. During the mapping and addressing process, the locality, by itself or with a vendor, identifies and names all of the streets and structures in the locality, assigns a street address to each structure in the locality and posts a street sign at each intersection. Often the jurisdiction will hire one vendor to perform the entire mapping and address process with the exception of the street naming, which is the responsibility of the locality. The result of this process is a list of the old addresses matched with the new addresses and the occupant's name and telephone number. The total cost for this process can range from $135,000 to $275,000 depending on the size of the jurisdiction. The Board is using the study being conducted for the wireless project to determine if a statewide or local approach should be pursued.

The second process is the network and equipment process. The local telephone company provides the network components, which are basically the telephone lines needed to complete the 9-1-1 call from the caller to the public safety answering point (PSAP). The local telephone company often, but not always, provides the enhanced 9-1-1 telephone equipment as well. This includes the equipment to answer the call, request the location information and display the information to the call taker. The cost for the network is $2,100 to $7,500 per 1,000 telephone access lines in the jurisdiction. In addition, the equipment will cost approximately $150,000 for a two-position PSAP.

Of the 20 localities not providing enhanced 9-1-1 services on July 1, 2001, seven have completed the mapping and addressing process, though one has not completed installation of the street signs. The remaining jurisdictions are in the early stages of planning or implementation of enhanced 9-1-1. To date, 4 jurisdictions have indicated that they plan to take no further action to implement Wireline as a result of legislation passed during the 2001 session previously mentioned.

County	Map	Sign	Equip	Net.	Sur.	Comments
Alleghany County	Y	Y	N	N	$0.30	No change since last report. Still looking at a regional PSAP with Clifton Forge and Covington. Has completed the addressing process.
Appomattox County	N	N	N	N	$3.00	Has completed the street naming process and is currently installing street signs. Targeting July 2003 for both wireline E-911 and wireless Phase I.
Bath County	N	N	N	N		No change per HB1611. Basic 9-1-1 with caller ID.
Bedford County	Y	Y	Y	Y		Had anticipated completion in 2000, but must still complete database creation. Targeting December 2001 for completion.
Bland County	N	N	N	N	$3.00	E-911 committee is meeting actively. Road naming process is ongoing. An RFP has been released for the mapping process. A contract is pending.
Buchanan County	N	N	N	N	$3.00	Implemented Basic 9-1-1 on 6-8-2001. Has executed a contract for the mapping process to be completed in eight months and has hired an E-911 Coordinator.
City of Clifton Forge	Y	Y	N	N		Reverted to town status. See Alleghany County.
City of Covington	Y	Y	N	N	$0.30	No change since last report. Still looking at a regional PSAP with Clifton Forge and Alleghany County. Has completed the addressing process.
Craig County	N	N	N	N		No change per HB1611.
Dickenson County	N	N	N	N	$3.00	Has executed a contract for mapping process and has hired an E-911 Coordinator.
Essex County	Y	Y	Y	Y		Implementation October 2000.
Fluvanna County	N	N	N	N	$1.50	Has basic 9-1-1. Has completed the mapping process and hired an E-911 Coordinator. Targeting June 2002 for new PSAP with wireline E-911.
Highland County	N	N	N	N		No change per HB1611. Basic 9-1-1 with caller ID.
King & Queen County	N	N	N	N	$2.00	Has basic 9-1-1. Has completed with street naming process and installation of street signs.
King William County	Y	Y	N	N	$3.00	Has basic 9-1-1. Has executed a contract for both the network and equipment.
Lee County	N	N	N	N		Has suspended activity due to the provisions of HB1611 from the 2001 General Assembly Session.
Lunenburg County	Y	Y	Y	Y		Implementation December 2000.
Madison County	N	N	N	N	$3.00	Has executed a contract for the mapping process with completion expected in spring 2002. Hiring an E-911 Coordinator in October 2001. New PSAP planned for April 2002.
Mathews County	N	N	N	N	$2.00	Has basic 9-1-1 with caller identification. Has executed a contract for the mapping process with completion expected in June 2002.
Middlesex County	Y	N	N	N	$2.00	Has basic 9-1-1. Currently, verifying street name and installing street signs. Call taking equipment is onsite but not installed. Planned implementation of E-911 in summer 2001.
Nelson County	Y	Y	Y	Y		Implementation September 2000.
Scott County	N	N	N	N		Working on establishing a surcharge.
Tazwell County	Y	Y	Y	Y		Had anticipated completion in 2000, but must still complete database creation. Targeting December 2001 for completion.
Westmoreland County	Y	Y	Y	Y		Implementation December 2000.

Figure 25 - Localities without E-911

Proposed Wireline E-911 Grant Guidelines

The Wireless E-911 Services Board is responsible for the establishment of the wireline E-911 grant guidelines. At their November and December 2000 meetings, the Board considered the following issues:

- Whether non-verified enhanced 9-1-1 should be considered as truly enhanced.
- What costs should be allowable under the grant program.
- How to measure a jurisdiction's need for state financial assistance.
- Should the grant be a single or multiple year grant.

The following sections detail the results of those discussions.

Non-Verified E-911

Ten jurisdictions (Figure 26) currently provide a type of enhanced 9-1-1 service that does not verify the address information when it is entered into the 9-1-1 database. Simply put, whatever location information is provided to the telephone company when the telephone service is ordered is entered into the 9-1-1 database. In a typical enhanced 9-1-1 system, all telephone service requests are verified against a list of the valid street names and address ranges in the jurisdiction. Consequently, if a citizen requests telephone service and provides an incorrect address, it is identified as an error and is flagged for resolution. This does not happen with a non-verified enhanced 9-1-1 system. All records are entered in the 9-1-1 database regardless of being valid. Instead of addresses, rural route or direction information is used in the 9-1-1 database.

The Wireless E-911 Services Board considered whether this level of service should be considered as being fully enhanced 9-1-1. The Board decided that since non-verified does not provide all of the benefits of E-911, these ten localities should be required to become fully enhanced

County	Map	Sign	Equip	Net.	Comments
Accomack/Northampton Co.	Y	Y	Y	Y	No change since the last report. Is still working with the telephone company to become validated.
Augusta County	Y	Y	Y	Y	Believes they have completed the validation process and are now fully E-911.
Buckingham County	N	N	Y	Y	No change since the last report. Needs to map and address before becoming validated.
Clarke County	Y	Y	Y	Y	Has completed the validation process and is fully E-911. Has also implemented Phase I wireless.
Cumberland County	N	N	Y	Y	Has completed the street naming and signage process. Estimated completion in Spring 2001.
City of Norton	Y	Y	Y	Y	No change since the last report. Needs to work with the telephone company to become validated.
Prince Edward County	Y	N	Y	Y	Has completed 50% of the street naming and signage process. Est. completion in Jan. 2001.
Pulaski County	Y	Y	Y	Y	Has been mapped and addressed. Needs to work with the telephone company to become validated.
Russell County	N	N	Y	Y	Needs to map and address before becoming validated.
Wise County	N	N	Y	Y	Needs to map and address before becoming validated.

Figure 26 - Non-Verified Enhanced 9-1-1

9-1-1 capable by the July 1, 2003 deadline established by *Code*. Six of the ten jurisdictions have everything in place to become fully enhanced. They are mapped, addressed, and have all of the required equipment. They need only communicate the valid street information to the telephone company, then the telephone company can validate all of the existing records in the 9-1-1 database. After fixing any invalid records, the jurisdiction will be providing fully enhanced 9-1-1. The four remaining jurisdictions need to map and address the jurisdiction before going through the validation process. Some of these jurisdictions may have a financial need for state assistance in order to complete this process.

Allowable Costs

The Wireless E-911 Services Board has determined that the following costs should be considered allowable under the wireline E-911 grant guidelines: mapping; addressing; street signage; customer premise equipment (PSAP equipment); and network costs. Further the Board has determined that the following costs be specifically identified as not being eligible for funding under the wireline E-911 grant guidelines: voice logging equipment; computer-aided dispatch systems; buildings and furnishings; and radio systems. The Board would consider any other items on a case-by-case basis.

Ability to Pay

The Wireless E-911 Services Board considered two methods for determining the financial need of each jurisdiction. The first method utilizes the Composite Index to determine the percentage of the allowable costs that the jurisdiction must fund. The Composite Index is used elsewhere in state government as an ability to pay indicator for localities, such as for education funding. As an illustration, if a jurisdiction has a Composite Index of .2345, the jurisdiction must fund 23.45% of the allowable cost of the project while the Board will fund 76.55% of the cost.

The second method considered by the Board for determining the financial need of a jurisdiction was based on the amount of funding that could be generated by the local E-911 surcharge. For a jurisdiction with 5,000 telephone lines, the amount funded by the jurisdiction would be calculated by multiplying the telephone line count by $1.50 (a midrange surcharge) by 24 months (the amount of time before the July 1, 2003 deadline). In this case the jurisdiction would fund $180,000 while the Board would fund the remaining cost of the project.

Since the Composite Index is an established method of determining a jurisdiction's ability to pay, the Wireless E-911 Services Board selected it as the preferred method (Figure 27); however, a disadvantage of this method was identified. A few of the jurisdictions would not be able to generate their share of the project funding using the local E-911 surcharge. In order to generate their share, one jurisdiction would have to charge $6.50 per month per access line over the next 24 months, which significantly exceeds the $3.00 monthly cap established in §58.1-3813.1 of the *Code of Virginia.*

To address this shortcoming, the Board developed the "Capped Composite" method of determining a jurisdiction's ability to pay. This method caps the jurisdiction's share as calculated using the Composite Index at the amount the jurisdiction can generate imposing a $1.50 over 24 months (Figure 28). The $1.50 amount is used rather than $3.00 to allow jurisdictions to use the surcharge to generate additional revenue for expenditures not covered by this grant, such as the salary of an E-911 Coordinator, and in deference to concerns raised regarding the amount of the E-911 surcharges.

Though the projections indicate that the state share of funding is $5,983,828, an appropriate amount of funding needs to be added to deal with the inevitable contingencies, such as the need to fund services not currently identified or fund a greater percentage of the cost, should the locality be able to demonstrate the fiscal need.

		Composite Method			
County	Project Cost	Composite Index	Jurisdiction Share	State Share	Surcharge Needed
Alleghany County	$ 370,000	0.3354	$ 124,098	$ 245,902	$ 0.84
Appomattox County	$ 470,000	0.3121	$ 146,687	$ 323,313	$ 1.00
Bath County	**$ 455,000**	**0.8000**	**$ 364,000**	**$ 91,000**	**$ 3.64**
Bland County	$ 455,000	0.2748	$ 125,034	$ 329,966	$ 1.49
Buchanan County	$ 507,500	0.2573	$ 130,580	$ 376,920	$ 0.51
Buckingham County	$ 275,000	0.2694	$ 74,085	$ 200,915	$ 0.42
City of Clifton Forge	$ 340,000	0.2423	$ 82,382	$ 257,618	$ 1.57
City of Covington	$ 355,000	0.3358	$ 119,209	$ 235,791	$ 1.44
Craig County	$ 447,500	0.3416	$ 152,866	$ 294,634	$ 2.48
Cumberland County	$ 175,000	0.3394	$ 59,395	$ 115,605	$ 0.62
Dickenson County	$ 485,000	0.2358	$ 114,363	$ 370,637	$ 0.58
Fluvanna County	$ 500,000	0.3817	$ 190,850	$ 309,150	$ 0.83
Highland County	**$ 440,000**	**0.5502**	**$ 242,088**	**$ 197,912**	**$ 6.50**
King and Queen County	$ 455,000	0.4021	$ 182,956	$ 272,045	$ 1.92
King William County	$ 202,500	0.3662	$ 74,156	$ 128,345	$ 0.48
Lee County	$ 522,500	0.1886	$ 98,544	$ 423,957	$ 0.33
Madison County	$ 470,000	0.4005	$ 188,235	$ 281,765	$ 1.35
Mathews County	$ 462,500	0.4798	$ 221,908	$ 240,593	$ 2.01
Middlesex County	$ 287,500	0.5658	$ 162,668	$ 124,833	$ 1.40
Russell County	$ 275,000	0.2298	$ 63,195	$ 211,805	$ 0.19
Scott County	$ 507,500	0.2298	$ 116,624	$ 390,877	$ 0.44
Wise County	$ 275,000	0.2237	$ 61,518	$ 213,483	$ 0.13
	$8,457,500		**$3,033,920**	**$5,423,580**	

Figure 27 - Composite Index Method

		Capped Composite		
County	Project Cost	Jurisdiction Share	State Share	Amount Increased
Bath County	$ 455,000	$ 150,156	$ 304,844	$ 213,844
City of Clifton Forge	$ 340,000	$ 78,587	$ 261,413	$ 3,795
Craig County	$ 447,500	$ 92,468	$ 355,032	$ 60,398
Highland County	$ 440,000	$ 55,872	$ 384,128	$ 186,216
King and Queen County	$ 455,000	$ 143,172	$ 311,828	$ 39,784
Mathews County	$ 462,500	$ 165,695	$ 296,805	$ 56,212
				$ 560,248

Figure 28 - Jurisdictions Impacted by Capped Composite Method

Single/Multiple Year Grant

The Wireless E-911 Services Board has determined that a multiple year grant is most appropriate for this project. This means that a jurisdiction will submit a grant request for the entire project amount rather than only that which can be spent in the following fiscal year. In this way, the Board can determine the projected cost of the entire project so that a single appropriation can be made.

Future Activities and Issues

Public Information Campaign

Section 56-484.14 (6) of the *Code of Virginia* assigns to the Wireless E-911 Services Board the duty to:

> "Take all steps necessary to inform the public of the use of the digits "9-1-1" as the designated emergency telephone number and the use of the digits "#-7-7" as a designated non-emergency telephone number."

Efforts to address this issue to date have been focused on posting road signs along our interstate highways instructing motorists on the use of 9-1-1 and #-7-7 for use in either emergencies or non-emergencies as may be the case. These signage programs have been initiated through the combined efforts of the State Police and the Department of Transportation and have been effective tools in reaching the public when driving on the interstate highways. However, with the proliferation of wireless phones in society today, additional efforts are necessary to reach and educate all users of wireless telephone service on the use of 9-1-1 and #-7-7. People now carry their wireless phones as they camp in our state parks, while they are floating our scenic rivers, when at the beach, etc. During the next year, the Board will explore the establishment of a public information campaign that may include:

1. Public service announcements utilizing both radio and possibly TV media at directed areas around the Commonwealth.
2. A statewide billboard campaign.
3. Additional roadway signage identifying localities served by 9-1-1.
4. Print advertisements or news articles.
5. Recognition programs for children or adults who use 9-1-1 to save a life.

Assistance for the above will be sought from local personalities, state officials, and PSAP personnel. There is a number of outstanding examples to reinforce the use of 9-1-1 in a positive way.

Automatic Crash Notification (ACN)

An ACN device automatically initiates a wireless call to emergency dispatchers upon detecting a crash of recognizable impact. With Mayday or first generation ACN systems today, telematics specialists such as OnStar or ATX Technologies verify that a crash has occurred and contact the appropriate PSAP based upon the car's location. With advanced forms of ACN, critical crash data will be transmitted to dispatchers (type of vehicle, principle direction of force, delta velocity, number of passengers, whether the car rolled, whether passengers were wearing seatbelts, and injury probability), which can immediately be transferred to emergency professionals.

According to the ComCARE Alliance, a coalition of public and private groups supporting such initiatives, “ACN will reduce response times to crashes and the time from crash to care, allowing victims to be treated within the "Golden Hour". If response times can be cut by just a few minutes, experts estimate that each year thousands of debilitating injuries could be prevented and lives could be saved. This is particularly true in rural areas where response times can exceed an hour.”

ACN will have a dramatic impact on PSAPs. The current enhanced 9-1-1 network is unable to carry the type of data generated by an ACN system. Even the network improvements being implemented as part of wireless enhanced 9-1-1 will not be able to handle ACN data. A new network will need to be designed and implemented. With first generation ACN systems available in many vehicles being sold today, second-generation systems may be available in the next few years.

To prepare for the advent of ACN systems, a new network must be designed. VDOT Intelligent Transportation System (ITS) Division has started a project in the Northern Shenandoah Valley to pilot such a network. The project is just beginning but it appears that it will be appropriate for the Board and the DPSC to be involved with the project. While VDOT ITS will play a major role in the pilot project, it may be beneficial for the DPSC to coordinate statewide deployment since the developed network will also benefit wireless E-911. The project is still in the early stage of developing a project scope and desired outcomes. Virginia Tech will provide project management for the pilot. The ComCARE Alliance is also participating in the project helping to coordinate private partners to assist with the pilot. DPSC staff will continue to explore this and other public-private partnerships to help address ACN data.

Satellite Telephone Service

Though satellite telephone service has existed for many years, the size of the telephone and operational cost prevented many people from using the technology. With telephones now costing $499 and service plans from $1.00 per minute, satellite service is expected to become increasingly popular with people needing wireless service where traditional cellular or personal communications is not available.

As a result, the FCC has announced a notice of proposed rule-making for satellite telephone’s ability to access 9-1-1. They are currently seeking comments on how such access could be accomplished and whether location information (similar to wireless Phase II) should be provided. Since an antenna site in space and not one located in a specific locality serves satellite telephone, the big technological question is how to determine the appropriate PSAP to send the call to. A report and order on satellite telephone is expected from the FCC within a year.

Voice over Internet Protocol (IP)

Voice over IP could replace the current wireline telephone service in use today. The concept is to convert voice to data and transmit it across the Internet as any other data. Voice over IP products are currently available at almost any electronics store that allow people to use the Internet to make long distance calls, thus avoiding toll charges. Since most people still access the Internet using a standard telephone line, voice over IP has been slow to replace wireline telephone service. As high-speed data becomes more widely available, voice over IP may increase significantly in popularity. The problem Voice over IP creates for the 9-1-1 system is the technology is so new that a method for locating such devices has not yet been developed.

Unfortunately, the FCC will not be addressing this issue in the short term. In press releases, the FCC Chairman spoke about voice over IP saying that the FCC would not institute any regulations that would tether such a fledgling technology. When specifically asked about enhanced 9-1-1, the Chairman commented that the technology must be given a chance to grow first, even before 9-1-1 requirements were placed upon it.

Conclusion

The wireless E-911 legislation currently in effect in Virginia is generally sound. It continues to demonstrate Virginia's leadership in 9-1-1 and commitment to public safety. The Board is recommending two changes be considered during the 2002 General Assembly Session. The first would explicitly include prepaid wireless service in the collection of the wireless surcharge and provide wireless service providers two methods to collect it. Currently, an inequity exists in that some providers collect the surcharge from prepaid subscribers and others do not collect it. The second recommended change would allow Board members to send an alternate to act in their place if they are unable to attend a Board meeting. The Board has had several meetings during the past year when a quorum was not met or was in jeopardy.

The implementation of wireless enhanced 9-1-1 is progressing slowly, but it is progressing. It is unclear at this point what impact the delays implementing wireless Phase I will have on meeting the dates required in §56-484.16 of the *Code* or on the implementation of Phase II. The amount of the wireless surcharge, $0.75, is appropriate given the cost of statewide implementation. While the Wireless E-911 Fund is currently healthy, the cost of Phase II will likely eliminate any fund balance currently enjoyed by the Fund. The Wireless E-911 Services Board has awarded a total of $7.8 million to 57 PSAPs for FY2002. Unfortunately, all of the major wireless providers have requested a waiver from the FCC to delay the implementation of Phase II service. While the FCC has yet to act on these requests, it is unlikely that wide scale deployments of Phase II will begin on October 1, 2001 as originally planned.

Progress toward the implementation of statewide wireline enhanced 9-1-1 has not progressed in many localities due to the lack of state funding assistance. Using the "Capped Composite" method approved by the Board, the state-funding share is $5,983,828. Adding a contingency, the Board renews its request for $9.8 million of the Wireless E-911 Fund to be allocated for wireline E-911 grants to localities. It is unlikely that all localities will implement E-911 by July 1, 2003 as required by *Code*, but few will be able to implement service at all without financial assistance.